

CLAIMS

1. A method of processing a request coming from a first communication apparatus connected through a communication network to a remote second communication apparatus, the method comprising a step of receiving the request for obtaining digital data of a compressed digital signal that comprises header data and a signal body comprising in particular data packets, wherein the processing of the request comprises a step of determining the position, in the body of the signal, of at least one data packet corresponding to the request according, on the one hand, to the length of the header data and, on the other hand, to at least one pointer marker present in the signal and adapted to provide the length of the part of the body preceding the data packet under consideration.

2. A method according to Claim 1, wherein the determination of the length of the part of the body of the signal preceding the data packet under consideration comprises a preliminary step of determining the order of appearance of said data packet in the body of the signal, according to parameters relating to the structure and organization of the data in the signal.

3. A method according to Claim 1, wherein the compressed digital signal is partitioned into a number  $n$  of independently compressed regions  $t_i$ ,  $i = 1$  to  $n$  and  $n \geq 1$ , the body of the signal comprising, for each region, region header data and a region body containing data packets of the region under consideration.

4. A method according to Claim 3, wherein the length of the part of the body of the signal preceding the data packet under consideration is determined from:

- at least one pointer marker PLT adapted to provide in particular the length of the data packet or packets preceding the data packet under consideration in the region where this packet is located,

30                   - the length of the header data of the region where the packet under consideration is located and, when one or more regions precede the region where the packet under consideration is located,

- at least one pointer marker TLM adapted to provide in particular the length of the preceding region or regions.

5. A method according to Claim 4, wherein the pointer marker (TLM) adapted to provide the length of each region  $t_i$  is present in the header data.

6. A method according to Claim 4, wherein the pointer marker (PLT) adapted to provide the length of the data packets in a region  $t_i$  is present in the header data of the region concerned.

7. A method according to Claim 1, wherein it comprises the steps of extracting and transmitting to the first communication apparatus said at least one data packet whose position has been determined.

8. A method according to Claim 1, wherein the request for obtaining digital data specifies at least one data packet of the signal.

9. A method according to Claim 1, wherein the request for obtaining digital data specifies part of the signal.

10. A method according to Claim 9, wherein, subsequent to the request being received, the method comprises a step of identifying the data packet or packets necessary for the reconstruction of the part of the signal specified.

20 11. A method according to Claim 1, wherein it comprises a preliminary step of forming said at least one pointer marker in the signal, when such a marker is not present in the signal.

25 12. A method of processing compressed digital data received by a first communication apparatus connected through a communication network to a remote second communication apparatus, the method comprising a step of receiving at least one data packet coming from a compressed digital signal present in the second apparatus and comprising a body that comprises in particular data packets, wherein the method comprises the following steps:

30 - determining a position at which said at least one data packet must be inserted into the body of a compressed digital signal derived from the compressed digital signal present in the second apparatus and which is capable of containing all or part of the body of this compressed digital signal, the derived

signal also comprising header data, the position being determined according, on the one hand, to the length of the header data and, on the other hand, to at least one pointer marker previously received and inserted into the signal by the first apparatus and which is adapted to provide the length of the part of the body 5 preceding said at least one data packet,

- inserting into the body of the derived signal said at least one data packet at the position thus determined.

13. A method according to Claim 12, wherein it comprises the following preliminary steps:

10 - receiving the header data coming from the original compressed digital signal present in the second apparatus, the received header data comprising at least one pointer marker TLM adapted to provide the length of the body of the original signal,

- from the received header data, forming the derived compressed

15 digital signal which thus comprises, as header data, the received header data and a signal body of length equal to that of the body of the original signal, the body of the derived signal representing a space initially filled with arbitrary data and which is intended to contain the data packet or packets received from the second apparatus.

20 14. A method according to Claim 12, wherein the compressed digital signal is partitioned into a number  $n$  of independently compressed regions  $t_i$ ,  $i = 1$  to  $n$  and  $n \geq 1$ , the body of the signal comprising, for each region, region header data and a region body containing data packets of the region under consideration.

25 15. A method according to Claim 14, wherein the length of the part of the body of the signal preceding the data packet under consideration is determined from:

- at least one pointer marker PLT adapted to provide in particular the length of the data packet or packets preceding the data packet under

30 consideration in the region where this packet is located,

- the length of the header data of the region where the packet under consideration is located and, when one or more regions precede the region where the packet under consideration is located,

5 - at least one pointer marker TLM adapted to provide in particular the length of the preceding region or regions.

16. A method according to Claim 15, wherein the pointer marker adapted to provide the length of each region  $t_i$  is present in the header data.

17. A method according to Claim 15, wherein the pointer marker adapted to provide the length of the data packets in a region  $t_i$  is present in the header data of the region concerned.

18. A method according to Claim 14, wherein it comprises the following steps:

15 - receiving region header data;  
- determining a position at which the received region header data must be inserted into the body of the derived signal, the position being determined according to the length of the header data of the derived signal and, when one or more regions precede the region header data concerned, also according to one or more pointer markers TLM received previously and providing respectively the length of the preceding region or regions;

20 - inserting the received region header data at the position thus determined.

19. A method according to Claim 12, wherein the determination of the length of the part of the body of the derived signal preceding the data packet under consideration comprises a preliminary step of determining the order of appearance of said data packet in the body of the signal according to parameters relating to the structure and organization of the data in the signal.

25 20. A method according to Claim 13, wherein it comprises a phase of converting the derived signal into a valid signal which comprises the following steps:

30 - extracting from the derived signal the header data and data packets received;

- forming the header data of the valid signal from the header data extracted from the derived signal;

- concatenating the data packets extracted from the derived signal in the body of the valid signal; and

5 - when one or more data packets present in the body of the original signal are not received by the first apparatus, concatenating respectively one or more empty packets in the body of the valid signal in the same order of appearance as that adopted in the derived signal.

21. A method according to Claim 13, wherein it comprises the  
10 following steps:

- going through the data contained in the body of the derived signal;  
- when the data gone through do not correspond to a data packet received from the second apparatus, converting the space filled by the data concerned into an empty packet; and

15 - shifting in an adapted manner the data constituting the remainder of the body of the derived signal.

22. A method according to Claim 12, wherein the data received by the first apparatus constitute the reply to a request previously transmitted from the first apparatus to the second apparatus.

20 23. A device for processing a request coming from a first communication apparatus connected through a communication network to a remote second communication apparatus, the device comprising means of receiving the request for obtaining digital data of a compressed digital signal that comprises header data and a signal body comprising in particular data  
25 packets, wherein the device comprises, for processing the request, means of determining the position, in the body of the signal, of at least one data packet corresponding to the request according, on the one hand, to the length of the header data and, on the other hand, to at least one pointer marker present in the signal and adapted to provide the length of the part of the body preceding  
30 the data packet under consideration.

24. A device according to Claim 23, wherein the means of determining the length of the part of the body of the signal preceding the data

packet under consideration comprise in particular means of determining the order of appearance of said data packet in the body of the signal, according to parameters relating to the structure and organization of the data in the signal.

25. A device according to Claim 23, wherein the compressed digital signal is partitioned into a number  $n$  of independently compressed regions  $t_i$ ,  $i = 1$  to  $n$  and  $n \geq 1$ , the body of the signal comprising, for each region, region header data and a region body containing data packets of the region under consideration.

26. A device according to Claim 25, wherein the length of the part of the body of the signal preceding the data packet under consideration is determined from:

- at least one pointer marker PLT adapted to provide in particular the length of the data packet or packets preceding the data packet under consideration in the region where this packet is located,

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- the length of the header data of the region where the packet under consideration is located and, when one or more regions precede the region where the packet under consideration is located,

- at least one pointer marker TLM adapted to provide in particular the length of the preceding region or regions.

20           27. A device according to Claim 23, wherein it comprises means of extracting and transmitting to the first communication apparatus said at least one data packet whose position has been determined.

25           28. A device according to Claim 23, wherein it comprises means of forming said at least one pointer marker in the signal, when such a marker is not present in the signal.

30           29. A device for processing compressed digital data received by a first communication apparatus connected through a communication network to a remote second communication apparatus, the device comprising means of receiving at least one data packet coming from a compressed digital signal present in the second apparatus and comprising a body that comprises in particular data packets, wherein the device comprises:

- means of determining a position at which said at least one data packet must be inserted into the body of a compressed digital signal derived from the compressed digital signal present in the second apparatus and which is capable of containing all or part of the body of this compressed digital signal,
- 5 the derived signal also comprising header data, the position being determined according, on the one hand, to the length of the header data and, on the other hand, to at least one pointer marker previously received and inserted into the signal by the first apparatus and which is adapted to provide the length of the part of the body preceding said at least one data packet;
- 10 - means of inserting, into the body of the derived signal, said at least one data packet at the position thus determined.

30. A device according to Claim 29, wherein it comprises:

- means of receiving the header data coming from the original compressed digital signal present in the second apparatus, the received header data comprising at least one pointer marker TLM adapted to provide the length of the body of the original signal,
- 15 - means of forming the derived compressed digital signal from the received header data and which thus comprises, as header data, the received header data and a signal body of length equal to that of the body of the original signal, the body of the derived signal representing a space initially filled with arbitrary data and which is intended to contain the data packet or packets received from the second apparatus.

31. A device according to Claim 29, wherein the compressed digital signal is partitioned into a number  $n$  of independently compressed regions  $t_i$ ,

- 25  $i = 1$  to  $n$  and  $n \geq 1$ , the body of the signal comprising, for each region, region header data and a region body containing data packets of the region under consideration.

32. A device according to Claim 31, wherein the length of the part of the body of the signal preceding the data packet under consideration is determined from:

- at least one pointer marker PLT adapted to provide in particular the length of the data packet or packets preceding the data packet under consideration in the region where this packet is located,

5 - the length of the header data of the region where the packet under consideration is located and, when one or more regions precede the region where the packet under consideration is located,

- at least one pointer marker TLM adapted to provide in particular the length of the preceding region or regions.

10 33. A device according to Claim 31, wherein it comprises:

- means of receiving region header data;

15 - means of determining a position at which the received region header data must be inserted into the body of the derived signal, the position being determined according to the length of the header data of the derived signal and, when one or more regions precede the region header data concerned, also according to one or more pointer markers TLM received previously and providing respectively the length of the preceding region or regions;

- means of inserting the received region header data at the position thus determined.

20 34. A device according to Claim 29, wherein the means of determining the length of the part of the body of the derived signal preceding the data packet under consideration comprises in particular means of determining the order of appearance of said data packet in the body of the signal, according to parameters relating to the structure and organization of the data in the signal.

25 35. A device according to Claim 30, wherein it comprises means of converting the derived signal into a valid signal which comprises more particularly:

- means of extracting from the derived signal header data and data packets received;

30 - means of forming the header data of the valid signal from the header data extracted from the derived signal;

- means of concatenating the data packets extracted from the derived signal in the body of the valid signal and, when one or more data packets present in the body of the original signal are not received by the first apparatus, of concatenating respectively one or more empty packets in the body of the valid signal in the same order of appearance as that adopted in the derived signal.

5 36. A device according to Claim 30, wherein it comprises:

- means of going through the data contained in the body of the derived signal;

10 - when the data gone through do not correspond to a data packet received from the second apparatus, means of converting the space filled by the data concerned into an empty packet; and

- means of shifting in an adapted manner the data constituting the remainder of the body of the derived signal.

15 37. A communication apparatus, wherein it comprises a device for processing a request according to Claim 23.

38. A communication apparatus, wherein it comprises a device for processing data according to Claim 29.

12 39. An information storage means readable by a computer or a microprocessor comprising code instructions of a computer program for executing the steps of the method of processing a request according to Claim 1.

40. An information storage means readable by a computer or a microprocessor comprising code instructions of a computer program for executing the steps of the method of processing data according to Claim 12.

25 41. An information storage means that is removable, partially or totally, readable by a computer or a microprocessor comprising code instructions of a computer program for executing the steps of the method of processing a request according to Claim 1.

42. An information storage means that is removable, partially or totally, readable by a computer or a microprocessor comprising code instructions of a computer program for executing the steps of the method of processing data according to Claim 12.

43. A computer program that can be loaded into a programmable apparatus, wherein it comprises sequences of instructions or portions of software code for implementing the steps of the method of processing a request according to Claim 1, when this computer program is loaded and executed by  
5 the programmable apparatus.

44. A computer program that can be loaded into a programmable apparatus, wherein it comprises sequences of instructions or portions of software code for implementing the steps of the method of processing data according to Claim 12, when this computer program is loaded and executed by  
10 the programmable apparatus.